

## 靴の製造法

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## 図面の簡単な説明

図面は本発明の靴の製造法の一実施例を示すもので、第1図は本発明に使用する脚被の貼型の側面図、第2図は貼型に裏脚被を被嵌せる一部欠載側面図、第3図は裏脚被の下部周辺部に補強体を貼着せる一部欠載側面図、第4図は未加硫ゴムの補強体の展開図、第5図は表脚被を貼着せる一部欠載側面図、第6図は接地底を接着してなる靴の一部欠載側面図、第7図イ、ロは本発明による靴及び従来製法の靴の拡大横断面図であつてそれらの対比を示す。

## 発明の詳細な説明

本発明は靴脚被内即ち足入れ部が足甲及び足裏の自然な曲線によく適合する曲線により形成し、足との密着と保持がよく従つて履心地が良好であり且この足型を崩すことがないよう保持し、構成部品、作業工程を節減し、製造原価を減減し得られる靴の製造法である。

本発明を図面に示す実施例に従つて説明すると、予め脚被aと底面bの二面により形成する全交線dを削り落して凸弧状cとなすことを特徴とする自然の足型の貼型Bを柔軟な一組成材によりなる袋状の裏脚被Aで以つて被嵌し、貼型そのまゝの自然な足型を形成する第1工程と、裏脚被の底面2及び脚被1の下部周縁1を一樣に未加硫ゴム版よりなる補強体Dの外周周縁3を巻き上げるよう被覆貼着する第2工程及び裏脚被の脚被部及び前記ゴム補強体の上部周縁部3を表脚被Cにて被覆貼着して靴脚被主体を形成する第3工程よりなり、更に公知の手段により前記靴脚被主体の底面に接地底Eを接着し加熱成型する第4工程よりなる靴の製造法である。

本発明は予め脚被a及び底面bの二面のなす全交線dを削り落して凸弧状cとなし且脚被aの不踏部辺の内側面に足裏の土踏まず部のアーチ状の凹みと同等の凹みeを凹設して自然な足型を形成した脚被の貼型Bを準備する。この貼型をメリヤス又はトリコット織布或は柔軟な薄状の皮革又はこれと同効の柔軟な一組成材をもつて袋状となした裏脚被Aを密着せしめるように嵌め込む、このため裏脚被は自然な足甲及び足裏の曲線に適合せる足入れ部を貼型からそのまま活用する。

次にこの裏脚被の形成する足入れ部が型崩れしないように、予め裏脚被の底面部及び脚被部の下部周辺部の全面積を展開した大きさに裁断された未加硫のゴム版の補強体Dを準備し、該補強体Dのゴム版の外周縁を一樣に巻き揚るようにして前記裏脚被の底面部及び脚被部の下部周辺部を被覆貼着する。この際、補強体Dに用いる未加硫ゴム版は、後述の接地底Eの接着手段とも関連して、表脚被Cの材料の選択に従つて所要の配合に係るものを使用することが望ましい。例えば表脚被に皮革材又はビニールレザーの成種のものをを用いる場合は、高温度の熱により皮革が変色又は変質する虞れがあるので低温の加熱で加硫する配合ゴム又は合成ゴムを使用する必要がある、又表脚被にナイロン布、綿布、強力人絹又は他の成種のビニールレザーを使用する場合は比較的に高温度の加熱に耐え変質又は変色しないので高温の加熱で加硫する配合ゴム又は合成ゴムを使用することが望ましい。

このようにして形成され、且貼着された補強体が剛性を帯びた後には、裏脚被の脚被部の下部周辺部を包蔽することになり、型崩れすることなく足裏及び足甲側を強固に保持し、脚被内で足が移動することがなく従つて足の爪先を傷害したり、足首を捻挫する虞れのない足入れ部の形成の基礎ができる。又公知の製法に於ける中底と中芯を兼備し、中底又は中芯を省略することができるので構成部品及び作業工程を削減し、量産に適し率いては生産原価を減減する。

表脚被Cは予め靴脚被型に縫製されたものを準備し、これを裏脚被の脚被部及び補強体の上部周縁部に互り被覆貼着して脚被主体を形成する。

次に前記脚被主体の底部に接地底を接着するには、公知の接着方法、例えば予め靴底型に裁断された未加硫のゴム版を用いて貼着した後一体に加熱成型するか、或は予め靴底型に成型された嵌め底を用いて嵌め込み貼着した後一体に加熱成型すればよい。前者の場合は前述の補強体の貼着に於けると同様に高温に耐える表脚被を用いた例に適し、後者の場合は同様に前述の補強体の貼着に於ける低温の加熱成型に用いる表脚被を選択した例に適し、更にこの場合は低温で加熱加硫できる未加硫ゴム版を用いることもできる。

このようにして得られた本発明による靴は、運動中、脚被内に於ける足を強固に保持して型崩れせず、従つて足の傷害を予防し、軽快にして体裁の良好な運動競技用靴として多量且安価に提供できる。

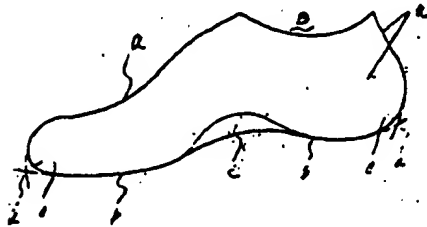
## 特許請求の範囲

1 図面並に本文に詳述する如く、脚被a及び底面bの二面のなす全交線aを削り落して凸弧状cとなし且脚被の不踏部辺の内側面に足裏の土踏まず部のアーチ状の凹みと同等の凹みeを凹設した脚被の貼型Bを柔軟な一組成材より

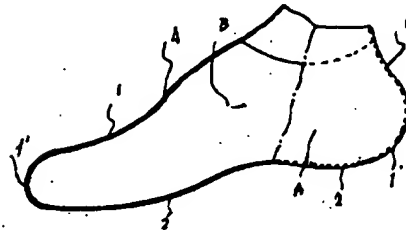
なる変状の裏脚被Aで以て被嵌し貼型そのままの自然な足型を形成する第1工程と、裏脚被の底面2及び踵側1の下部周縁1'を未加硫ゴム版の補強体Dの外周縁3を巻き揚るよう被覆貼着する第2工程及び裏脚被の踵側部及び前記

ゴムの補強体の上部周縁部3'を表脚被Cにて被覆貼着して靴脚被主体を形成する第3工程よりなり、更に公知の手段により前記靴脚被主体の底面に接地底Eを接着し加熱成型する第4工程よりなる靴の製造法。

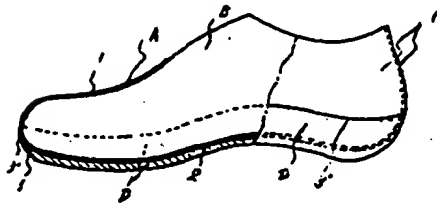
第1図



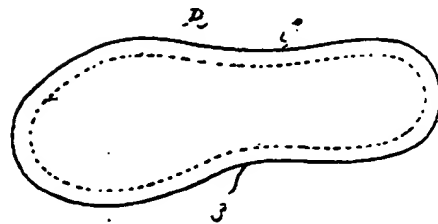
第2図



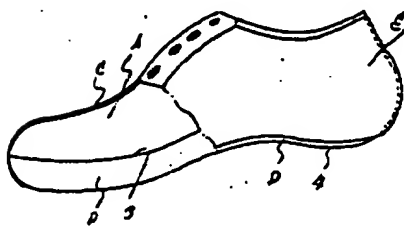
第3図



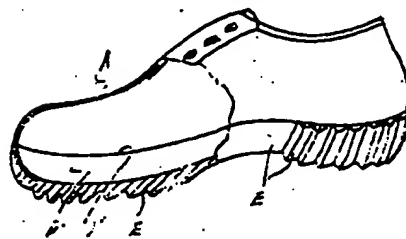
第4図



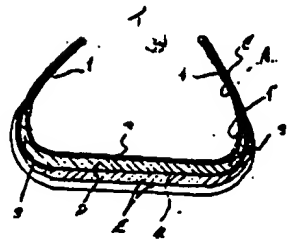
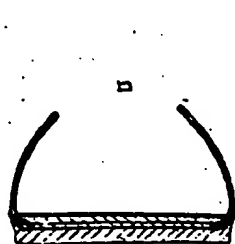
第5図



第6図



第7図



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JP35(1960) - 29728  
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Applicant: ONITUKA CO., LTD.

Title of the Invention      METHOD OF MAKING SHOES

Brief Description of the Drawings

In the drawing which shows a certain embodiment of a method of making a shoe in accordance with the present invention, Fig. 1 is a side view of a last for an instep cover for use in the present invention; Fig. 2 is a side view partly cut away of the last tightly wrapped with an inside instep cover; Fig. 3 is a side view partly cut away of the inside instep cover with a lower peripheral area having a reinforcement applied and stuck thereto; Fig. 4 is a development view of the reinforcement made of unvulcanized rubber; Fig. 5 is a side view partly cut away of an outside instep cover applied and stuck; Fig. 6 is a side view partly cut away of a shoe with a ground contacting sole bonded; and Figs. 7(right side) and 7(left side) are enlarged cross sectional views comparatively showing a shoe according to the present invention and a shoe according to the prior art.

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to a method of making a shoe which is prepared an instep cover interior, i.e., a foot accommodating part, with a curvature conforming

to a natural curvature of foot instep and sole to well fit with and hold the foot, and thus is comfortable and easy to wear while keeping the foot undeformable in form, and can yet be manufactured with less component parts, in a reduced number of production steps and with a reduced cost.

An explanation will be given of an embodiment of the present invention with reference to the accompanying drawings. The invention embodied comprises a first step of making a last B of a pattern modeling a natural foot by shaving off a total nodal line d formed from an instep side a and a bottom surface b to form a convex arc c. And then tightly wrapping the last with an inside instep cover A in the form of a bag made of a pliable material, thereby providing a reproduced natural foot pattern that is contoured identically to the last. In a second step of the method, a reinforcement D in the form of an unvulcanized rubber patch is applied and stuck uniformly to a bottom area 2 and a lower peripheral side 1 of the inside instep cover with an outer periphery 3 of the reinforcement D rolled up thereover. In a third step of the method, an outer instep cover C is applied and stuck or pasted over the side of the inside instep cover and an upper peripheral region 3' of the above mentioned rubber reinforcement, thereby forming a main body of the shoe instep cover. The method further includes a fourth step in which using a known means a ground contacting sole element E is adhesively bonded to and then thermally joined with the said main body of the shoe instep cover.

Thus, in a preliminary step of the present method, a last B is prepared in which nodal lines d where an instep side surface a of and a bottom plane b are joined with

each other are shaved off to be convexly rounded to form a dent e in the bottom that corresponds to the arch of the foot sole. The last so formed is then tightly fitted in and wrapped with an inside instep cover A in the form of a bag made of a pliable material such as a knitted cloth, a tricot woven cloth, a thin flexible leather or the like. Thus, the inside instep cover forms a foot accommodating part with a curvature for both the instep and sole of a natural foot from the last.

Then, such that the foot accommodating part formed by the inside instep cover may not be deformed, a reinforcement D is prepared in the form of an unvulcanized rubber patch cut in a size that the total surface area of a lower peripheral region of the bottom and instep side portions of the inside instep cover when developed possesses. The rubber reinforcement patch D, while being rolled up over, is applied and stuck or pasted to the bottom and lower peripheral instep side of the inside instep cover. In this case, it is desirable the composition of unvulcanized rubber patch functioning as a reinforcement D is selected taking into account not only an adhesive bonding means for a ground contacting sole E to be later described, but also a material selected for an outside instep cover C. For example, if a certain of leather or PCV leather-cloth is used for the outside instep cover, in order to avoid possible discoloring or degeneration of the leather when heated at a high temperature, it is necessary that the rubber reinforcement patch be made of a compound or synthetic rubber that can vulcanize at a low temperature. Also, if the outside instep cover is made of a nylon cloth, a cotton cloth, a high-strength rayon silk or a certain of PCV leathers which does not discolor or degenerate at a fairly high temperature, so it is desirable that the rubber

patch be composed of a compound or synthetic rubber that vulcanize at a higher temperature.

After the reinforcement so formed and stuck has become rigid, it will tightly enclose the lower peripheral region of the instep side portion of the inside instep cover to render the foot immobile therein, thus providing a basis for the foot accommodating part that eliminates the possibility that the toe may be damaged or the ankle may be sprained. Also, since an inner sole or core as provided in the conventional method is simultaneously formed, the necessity to provide a separate inner sole or core can be eliminated; hence a shoe can be manufactured with a reduced number of component parts and in a reduced number of working steps, and being suitable for mass production, eventually with a reduced production cost.

The outside instep cover **C** may make use a preliminarily sewn one that is prepared with a shoe instep cover form. The outer instep over so prepared may be applied over an upper peripheral region of the instep cover and reinforcement portions of the inside instep cover and stuck thereto, thereby forming a main body of the instep cover.

Then, a ground contacting sole **E** is adhesively bonded to the instep cover main body so formed. This can be achieved using any known method, e.g., either by using an unvulcanized rubber patch that has been prepared by preliminarily cutting with a shoe sole form, the patch being made integral with the main body by pasting followed by heating, or using a fittable shoe sole that has been prepared by forming with a shoe sole form, the sole being made integral with the main body by fitting and then followed

by pasting and heating. It should be noted that the former is suitable when the outside instep cover is made to withstand an elevated temperature as with the reinforcement material pasted, while the latter is similarly suitable with an outside instep cover material selected for use in a thermal integration at a lower temperature with a reinforcement material pasted. In the latter case can also be used an unvulcanized rubber material that may be heated and vulcanized at a lower temperature.

A shoe that is made in a way as described according to the present invention is shown, in motion to be free from deformation while capable of holding the foot firmly within the instep cover, with the ensuing ability to prevent damage to the foot. Also, the shoe is suitable for mass production and can be furnished as athletic sports shoes with light and well styled.

WHAT IS CLAIMED IS:

A method of making a shoe, comprising, as described the foregoing text and the accompanying drawings, a first step of enclosing a last **B**, in which nodal lines where an instep side surface **a** and a bottom plane **b** are joined with each other are shaved off to be convexly rounded **c** to form a dent **e** that corresponds to the arch of the foot sole, tightly with an inside instep cover **A** in the form of a bag made of a pliable material, thereby providing a reproduced natural foot pattern that is contoured identically to the last, a second step of applying and sticking a reinforcement **D** in the form of an unvulcanized rubber patch uniformly to a lower peripheral rim **1'** of the bottom plane **2** and instep side **1** of the inside instep cover with an outer peripheral rim **3** rolled up thereover, a third step of applying and sticking an outside instep cover **C**

over the instep side of the inside step cover and an upper peripheral rim 3' of said rubber reinforcement, thereby forming a main body of the shoe instep cover, and a forth step in which using a known means, a ground contacting sole element E is adhesively bonded to and then thermally joined with said main body of the shoe sole instep cover.

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